

Appln. No. 10/645,432
Amendment dated July 28, 2004
Reply to Office Action mailed June 7, 2004

REMARKS

Reconsideration is respectfully requested.

Claims 1, 3 through 16, 18, and 20 through 23 remain in this application. Claims 2, 17, 19, and 24 through 32 have been cancelled. No claims have been withdrawn. Claims 33 through 34 have been added.

Paragraphs 1 through 3

Affirmation of the election of Species I, illustrated in Figures 1 through 6, is hereby made. As no claim is generic to all embodiments of the invention, claims 24 through 32 have been cancelled as being directed to non-elected embodiments.

Paragraphs 4 through 6 of the Office Action

Claims 1, 3 through 5, 8 through 11, 14 through 16, 18 and 20 through 23 have been rejected under 35 U.S.C. §102(b) as being anticipated by Rubey (U.S. Patent 4068613).

Further, claims 1 through 5, 13, 16, 18 and 19 have been rejected under 35 U.S.C. §102(b) as being anticipated by Itoh (U.S. Patent 3707722).

Claim 1 has been amended to include the requirements of claim 2, and therefore claim 1 now presents the requirements of claim 2 as originally filed. Thus, claim 1 now requires "wherein said base member and said top member provide a compressive force to said bearing such that said bearing is held in place until said device is subjected to a shock force greater than a predetermined threshold". Claim 18 has been amended to include the requirements of claim 19, with requirements similar, but not identical, to claim 1.

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The rejections of claims 2 and 19 are thus relevant to claims 1 and 18, respectively, and it is noted that claims 2 and 19 were not rejected based upon the Rubey patent, but were rejected based upon the Itoh patent alone. The Itoh patent shows an "impact acceleration recording device" in which a weight disc 1 is nested in thin annular plates 3 and is driven between the plates 3 when high forces are applied to the device. In particular, it is stated in the Office Action with regard to the Itoh patent that:

Itoh discloses a circular shock force indicating device . . . wherein said base member and said top member provide a compressive force to said bearing such that said bearing is held in place until said device is subjected to a shock force greater than a predetermined threshold (Figure 2).

However, it is submitted that, rather than the case 4 and cover plate 5 of Itoh applying a compressive force on the weight disc 1 of Itoh, it is, conversely, the balls 11, 13 of Itoh nested in the weight disc 1 that are being forced outwardly against the case 4 and the cover plate 5 by the spring 12. See, e.g., Itoh at col. 3, lines 27 through 35 (emphasis added):

The weight disc is further provided through its boss 9 with an axial note 10, in which are placed a spring 12 and steel balls 11 and 13 abuttingly in contact with opposite ends of the spring 12, which thereby urges the steel balls 11 and 13 outward and against the inner surfaces of the case 4 and the cover plate 5, respectively. For recording, these inner surfaces are coated beforehand with an inscribable material such as layers of paint 14 and 15, for example.

It is therefore submitted that the inner surfaces of the case and the cover plate *do not* applying a *compressive force* on the weight disc 1 or the balls 11, 13, but that the opposite is instead true: the balls exert an outward force on the case and cover. It may be helpful to consider that, if the case and cover were to be removed from the structure shown in cross section in Figure 4 of the Itoh patent, the balls 11, 13 would be unconstrained and would freely move outwardly, but if the spring 12 and

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the balls 11, 13 were removed from the structure depicted in Figure 4, the inner surfaces of the case 4 and cover 5 would not move inwardly against the weight disc 1. It is therefore submitted that the Itoh patent does not disclose to one of ordinary skill in the art a relationship in which the case and the cover apply a compressive force (as required in claim 1), but merely resist the pressure applied to them by the outwardly biased balls 11, 13 of the weight disc.

It is therefore submitted that the Itoh patent would not lead one of ordinary skill in the art to the applicant's claimed invention as defined in claims 1 and 18, especially with the requirements set forth above, and therefore it is submitted that claim 1 is allowable over the prior art. Further, claims 3 through 6, 9, 11 through 16, and 23, which depend from claims 1 and 18, also include the requirements discussed above and therefore are also submitted to be in condition for allowance.

As for claim 8, which has been written into independent form, it requires "a spring, one end of said spring being connected to the base member at a substantially centered location on the top surface of said base member, an other end of said spring being connected to said bearing, said spring adapted to allow a predetermined amount of movement of said bearing when said device is subjected to a shock force of a particular magnitude". Claim 20 includes similar requirements. Claim 10, which has also been written into independent form, it requires "an elastic member, one end of said elastic member being connected to said base member at a substantially centered location on the top surface of said base member, an other end of said elastic member being connected to said bearing, said elastic member adapted to extend to allow movement of said bearing when said device is subjected to a shock force of a particular magnitude". Claim 22 includes similar requirements.

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The Rubey patent shows in the embodiment of Figures 13 through 15 that a coil spring 91 is mounted to the case 93 by a bracket 95 at a location that is clearly spaced radially outward from the center of the case and is actually closely adjacent to the outer perimeter wall of the case. It is therefore submitted that the Rubey patent shows a structure that employs a relationship that is opposite of the requirements of claims 8, 10, 20 and 22, as each of these claims requires that the spring or elastic member is connected to the base member at a substantially centered location on the base member. As the Rubey patent shows an opposite relationship from the requirements of these claims, it is submitted that the Rubey patent is incapable of leading one of ordinary skill in the art to the requirements of claims 8, 10, 20 and 22.

Withdrawal of the §102(b) rejection of claims 1, 3 through 5, 8 through 11, 14 through 16, 18 and 20 through 23 is therefore respectfully requested.

Withdrawal of the §102(b) rejection of claims 1, 3 through 5, 13, 16, and 18 is therefore respectfully requested.

Paragraphs 7 and 8 of the Office Action

Claim 6 has been rejected under 35 U.S.C. Section 103(a) as being unpatentable over Rubey.

Claim 6 requires "wherein said top member is dome-shaped".

It is acknowledged in the Office Action that Rubey "does not disclose in the embodiment of Figures 13-15 that said top member is dome-shaped", but then it is contended that:

Rubey discloses, in the embodiment shown in Figures 11 & 12, a shock force device (13) with a dome-shaped top member (79) (Figures 11 & 12). Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention was made

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to replace the flat top member disclosed by Rubey with the dome-shaped top member disclosed by Rubey in order to save material.

The rejection of claim 6 is thus based upon the position that it would have been obvious to combine the distinct embodiments of the Rubey patent shown in Figures 11 through 12 and 13 through 15 by modifying the case 93 of the embodiment of Figures 13 through 15 with the dome 81 of the embodiment of Figures 11 through 12.

With regard to the embodiment of Figures 11 through 12, the Rubey patent states at col. 12, line 67 through col. 13, line 26 (emphasis added):

In FIGS. 11 and 12, there is illustrated a mechanical embodiment of the device 13 which affords a "go-no go" condition. Specifically, in FIG. 11, a weight 75 is attached via a hard drying adhesive, or some other suitable means, via a predetermined neck 77 to the concave side 79 of a transparent dome 81. The pedestal 83 is molded as an integral part of the dome and provides a precise contact area for the weight attachment. The weight 75 will break the bond and become loose in the container when the forces on the weight exceed the strength of the bond, as by a certain shock, or acceleration. The transparent dome may have dual sided tape, or adhesive backing 85, for being affixed directly to the skin 87 of a case of the like. If desired, of course, the transparent dome may be affixed to a suitable mounting base and the base attached to the skin 87, or the instrument being monitored.

In operation, the shock detecting device 13 is assembled as described hereinbefore and affixed, by being adhered, to the skin 87. The container, or case, is then carried around as usual. In the event that the predetermined shock is effected, the weight 75 is broken loose and will be visible to the observer in a position other than the center; for example, on one side as shown by the dashed lines 89. This warns the observer that the predetermined shock has been received and that the device or instrument in the case should be recalibrated, or carefully checked, before being used.

This embodiment of the Rubey apparatus, while able to detect when the force applied to the apparatus exceeds a particular level, is incapable of measuring or recording the magnitude or direction of the applied force.

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In contrast, the Rubey patent describes at col. 13, lines 27 through 45 the embodiment of Figures 13 through 15, and states (emphasis added):

Still another mechanical embodiment of the invention is illustrated in FIGS. 13-15. Therein, the shock detection device 13 includes the mounting base 23, as described hereinbefore, the measuring means 19, and the indicator means 21, FIG. 15. Specifically, the measuring means comprises a coil spring 91 that is affixed rigidly at its end to the case 93, as by brads and bracket 95. The coil spring 91 supports a weight 97. As indicated, the weight 97 has a marking stylus 99 that impinges upon a record 101 so as to make a track of the traverse, or trajectory, of the weight 97. The stylus 99 may comprise a rounded stylus, such as rounded sapphire, a corundum stylus, a diamond stylus, or the like; or it may comprise a suitable marking device, such as a ballpoint pen or the like. The latter approach has reduced friction in contact with the record 101.

If desired, the record may be emplaced atop the weight, as indicated by the dashed lines 103 for even further reduced friction.

This embodiment of the Rubey apparatus is thus able to indicate the direction and relative magnitude of the applied force by marking on the record 101 on the mounting base 23 and the record 103 on the underside of the case 93.

Thus, while the embodiment of Figures 11 through 12 is directed to a device that merely detects when the force applied thereto exceeds a predetermined limit, without being able to record any particular variations in the amount of force applied, the embodiment of Figures 13 through 15. It is therefore submitted that one of ordinary skill in the art, considering the embodiment of Figures 13 through 15 of the Rubey patent, would not look to the embodiment of Figures 11 through 12 of the Rubey patent for modifications to improve the apparatus of Figures 13 through 15, as the embodiment of Figures 11 through 12 provides significantly less information about applied forces than the embodiment

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of Figures 13 through 15, and operates in a completely different manner than the embodiment of Figures 13 through 15.

Further, the embodiment of Figures 13 through 15 employs a stylus 99 that is able to mark not only on the record 101 on the mounting base 23, but also on the record 103 located on the underside of the case 93. Attempting to modify the case 93 of Figures 13 through 15 with the dome 81 of Figures 11 through 12 would make it impossible for the stylus 99 to mark on the record 103 located on the underside of the case 93, thus removing some of the functionality of the embodiment of Figures 13 through 15.

Moreover, with respect to the motivation set forth in the Office Action that modifying the embodiment of Figures 13 through 15 in the suggested manner would "save material", it is noted that nothing in the discussion of the Rubey patent states that the use of the dome 81 of Figures 11 through 12 would eliminate or reduce the amount of material used. Further, and perhaps more importantly, the dome 81 of the embodiment of Figures 11 through 12 is significantly taller than the case 93 of the embodiment of Figures 13 through 15, so it is not at all apparent that modifying the case 93 of the embodiment of Figures 13 through 15 to adopt the dome 81 would necessarily eliminate material. Also, as patent drawings are not drawn to any scale, it would be difficult for one of ordinary skill in the art to determine whether the dome 82 of Figures 11 through 12 actually uses less material than case 93.

It is for these reasons, among others, that it is submitted that the modification of the embodiment of Figures 13 through 15 suggested in the Office Action would not be obvious to one of ordinary skill in the art, and therefore the requirements of claim 6 are not obvious in view of the Rubey patent.

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Withdrawal of the §103(a) rejection of claim 6 is therefore respectfully requested.

Paragraph 9 of the Office Action

Claim 12 has been rejected under 35 U.S.C. Section 103(a) as being unpatentable over Rubey in view of Mangini et al. (U.S. Patent 5046609).

Claim 12 requires "wherein said pressure sensitive paper is carbon paper".

With respect to claim 12, it is alleged in paragraph 9 of the Office Action that:

Rubey discloses all of the instant claimed invention as stated above in the rejection of claims 1, 3-5, 8, 10, 11, 14-16, 18, 20, 22, & 23, but does not disclose said pressure sensitive paper is carbon paper.

Mangini et al. discloses a kit for distributing pharmaceutical products which uses carbon paper to minimize the work involved in record keeping (col. 2 lines 42-47). Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention was made to replace the paper disclosed by Rubey with the carbon paper disclosed by Mangini et al. in order to minimize the work involved in record keeping.

It is thus alleged that it would have been obvious to one of ordinary skill in the art to modify the shock detecting device of Rubey with the carbon paper feature of the pharmaceutical kit of the Mangini patent. However, it is noted that while the Rubey device employs a stylus 99 to directly mark on a record 101 (formed of undisclosed material), the Mangini device employs carbon paper between a pair of sheets to transfer markings being made on one sheet to another sheet, in typical carbon paper usage. Since the Rubey device does not involve any transfer of markings from one sheet to another sheet, which is the problem addressed in the Mangini patent, it is submitted that one of ordinary

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skill in the art would not apply the carbon paper teaching of the Mangini patent to the record 101 of the Rubey device.

It is therefore submitted that the cited patents, and especially the allegedly obvious combination of Rubey and Mangini set forth in the rejection of the Office Action, would not lead one skilled in the art to the applicant's invention as required by claim 12.

Withdrawal of the §103(a) rejection of claim 12 is therefore respectfully requested.

Paragraph 10 of the Office Action

Paragraph 10 of the Office Action states that claim 7 would be allowable if written into independent form with the limitations of the base claim and any intervening claims.

The above amendment incorporates the requirements of claim 1 (in its as filed form) into claim 7, and therefore claim 7 is submitted to be in condition for allowance.

Added Claims

Added claim 33 requires, in part, "wherein said top member has a concave lower surface such that a distance between the top surface of said base member and the concave lower surface of said top member decreases in a radially outward direction from a substantially centered position on the top surface of said base member so that movement of said bearing outwardly from a substantially centered position on said base member requires progressively greater shock force on said device". This relationship, which is disclosed in the application, for example, in Figures 3 and 4 of the drawings, is submitted to be patentable over the cited patents for many of the reasons set forth above with respect to claim 6.

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Added claim 34 requires, in combination with the requirements of claim 33, "wherein said distance between the top surface of said base member and the lower surface of said top member at said substantially centered position is substantially equal to a diameter of said bearing". This relationship, disclosed in the present application at least in Figure 3 of the drawings, is clearly foreign to the showing in Figure 11 of the Rubey patent, and therefore it is submitted that the art would not lead one of ordinary skill in the art to such a relationship.

Therefore, claims 33 and 34 are submitted to be in condition for allowance.


CONCLUSION

In light of the foregoing amendments and remarks, early reconsideration and allowance of this application are most courteously solicited.

Respectfully submitted,

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